

Notes on the external anatomy of nine pyramidellid marine snails (Gastropoda: Pyramidellidae) from Victoria

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Abstract

The live observation of nine species of pyramidellid marine snails from Victorian waters has allowed a report on their external anatomy. Brief notes on the family are also provided. (*The Victorian Naturalist* 124 (5), 2007, 296-305)

Introduction and methods

Recent intertidal records have allowed living pyramidellid marine snails from various Victorian localities to be studied. The animals have been legally collected by members of the Marine Research Group under permits held from Parks Victoria. They were kept alive in seawater and examined in this medium under the stereomicroscope, where notes and drawings were made. Specimens have been preserved in 70% ethanol and lodged in the Marine Invertebrate Department, Museum Victoria.

Summary of species examined

The higher classification below follows Bouchet and Rocroi (2005). Sub-family placements have been guided by the arrangement given in Schander *et al.* (1999).

Superfamily Pyramidelloidea

Family Pyramidellidae

Subfamily Odostomiinae

Odostomia deplexa (Tate & May, 1900)

Linopyrga pascoei (Angas, 1867)

Linopyrga portseaensis (Gatliff & Gabriel, 1911)

Pseudoskenella depressa Ponder, 1973

Subfamily Syrnelinae

Syrnola bifasciata Tenison Woods, 1875

Syrnola tinctoria Angas, 1871

Subfamily Turbonillinae

Cingulina spina (Crosse & Fischer, 1864)

Pyrgiscus fuscus (A. Adams, 1853)

Turbonilla beddomei (Petterd, 1884)

Observations

Odostomia deplexa (Tate & May, 1900)

Material: One specimen, sieved intertidally from among mud and *Zostera* seagrass, Crawfish Rock, Western Port Bay, Victoria, Friday 28 November, 2006. Collected by R. Burn. Museum Victoria reference number F113533.

Shell (Fig. 1a): The shell is 2.9mm long, elongate and smooth, semi-opaque and very light yellowish-white in colour. The protoconch is not prominent and appears insert, and the columella bears one small plication. There is a very narrow, indistinct umbilicus behind the columellar reflection. The operculum is elongate oval, sturdy, and brownish-yellow with no spiral markings.

Animal (Fig. 2a): The animal is semi-opaque white, with the cephalic tentacles semi-translucent white and lightly tinged lemon-yellow. There are occasional fine cream-white spots on the dorsal foot and mentum; on the central head behind the eyes these are densely aggregated, forming a whitish patch. The cephalic tentacles are long and delicate, flattened along their length, each bearing a small semi-translucent tentacular pad at the outer end. The eyes are black and the mentum is small, smoothly rounded with no notch. The extended foot is two-thirds to three-quarters of the shell length, bi-lobed anteriorly, wider centrally, and bluntly rounded posteriorly. The sole bears a very faint cleft in its midline, commencing at mid length and extending posteriorly but not reaching the end. The extended animal sits relatively low in the dorso-ventral plane, and crawls with a smooth, gliding motion.

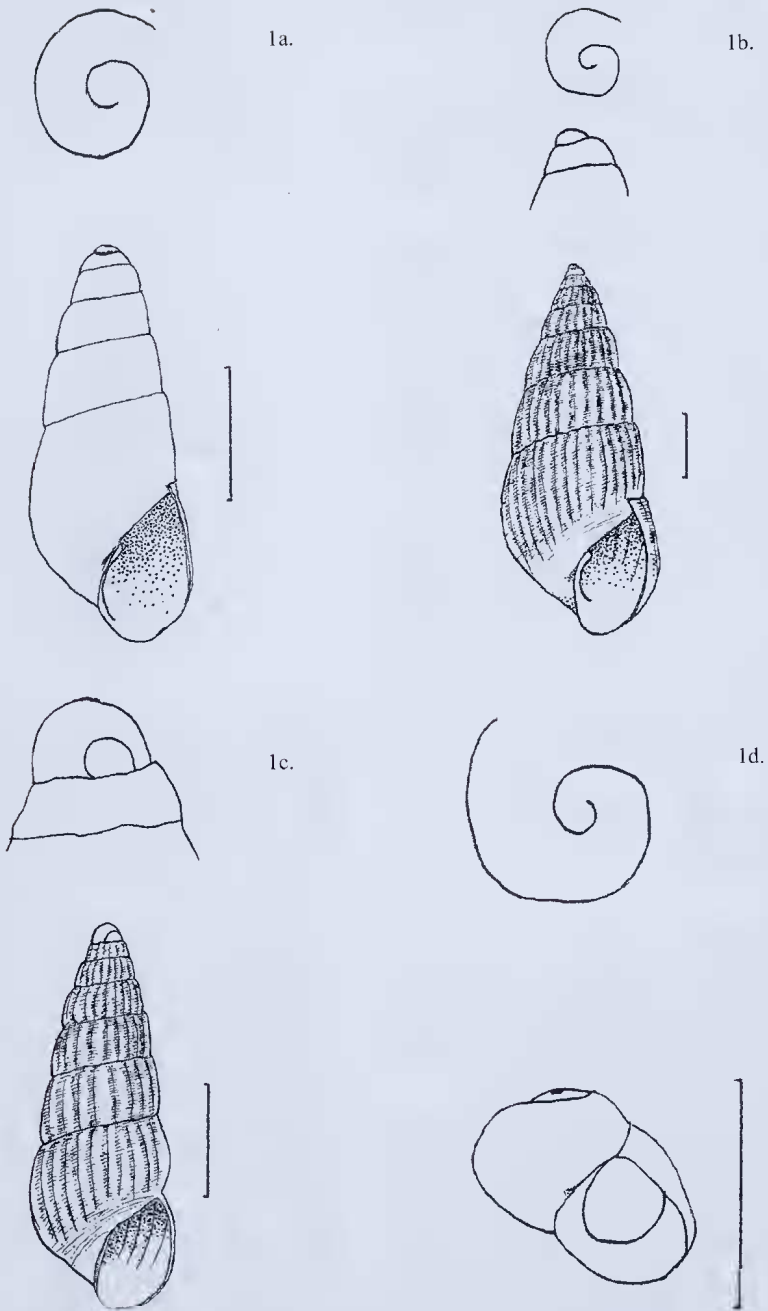


Fig. 1. Drawings of shells (scale lines indicate 1.0 mm) and protoconchs above each shell (not to scale). a). *Odostomia deplexa* (Tate & May, 1900) (protoconch viewed from above). b). *Linopyrga pascoei* (Angas, 1867) (protoconch viewed from side and above). c). *Linopyrga portseaensis* (Gatliff & Gabriel, 1911). d). *Pseudoskenella depressa* Ponder, 1973 (protoconch viewed from above; retracted operculum visible inside aperture).

Distribution: It is found from Victoria to South Australia, including Tasmania (Cotton, 1959).

***Linopyrga pascoei* (Angas, 1867)**

Material: One specimen, intertidally, from West Cape, Cape Conran (just east of boat ramp), Victoria, 1 March, 2006. Collected by R. Burn. Museum Victoria reference number F113531.

Shell (Fig. 1b): The shell is 5.5 mm long, sturdy and opaque white. The whorls bear axial ribs and many microscopic spiral striae, with the former fading anteriorly on the body whorl. Laseron (1951) observed the axial ribs traversing the length of the body whorl, but Angas (1867) described them as fading anteriorly. The columella bears a plication and the protoconch from above appears insert. No observations have been made on the operculum.

Animal (Fig. 2b): The animal was sluggish and microscopic examination has not occurred. Observations here are restricted to those of the animal being white, with black eyes situated near the midline. Hedley (1916) offers a brief description and diagram of the living animal, noting it to be uniform cream in colour with black eyes, with the animal creeping away from light.

Distribution: It is found in New South Wales (Jansen, 1995), with this record extending the range to eastern Victoria (Burn, pers. comm.).

***Linopyrga portseaensis* (Gatliff & Gabriel, 1911)**

Material: One specimen, intertidally, from West Cape, Cape Conran (just east of boat ramp), Victoria, 1 March, 2006. Collected by R. Burn. Museum Victoria reference number F113530.

Shell (Fig. 1c): The shell is 3.4 mm long, opaque white and more slender than *L. pascoei*. The whorls bear axial ribs and many microscopic spiral striae, the latter continuing to the anterior aspect of the body whorl. The columella lacks a plication and the protoconch is angled, partially engulfed by the succeeding teleoconch whorl, and somewhat worn so that detail is not clear. No observations have been made on the operculum.

Animal (Fig. 2c): The animal was sluggish and microscopic examination has not

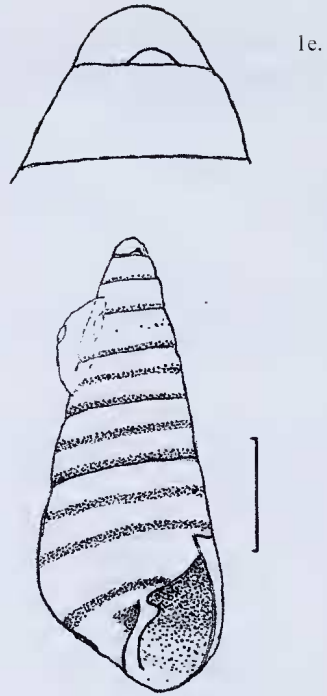


Fig. 1 (cont'd). Drawings of shells (scale lines indicate 1.0 mm) and protoconchs above each shell (not to scale). e). *Syrnola bifasciata* Tenison Woods, 1875. f). *Syrnola tincta* Angas, 1871. g). *Cingulina spina* (Crosse & Fischer, 1864). h). *Pyrgiscus fuscus* (A. Adams, 1853) (Cape Conran specimen). i). *Turbonilla beddomei* (Petterd, 1884) (Blanket Bay specimen).

occurred. It has been photographed extended, and, on this basis, limited observations are offered. The animal is white, the cephalic tentacles are relatively short and somewhat triangular in outline, the eyes are black and situated centrally, the mentum is long and extends beyond the anterior foot. The end of the mentum is notched centrally and laterally expanded.

Burn (unpubl.) has observed and figured a specimen of *Linopyrga* cf. *portseaensis* collected from *Enteromorpha* algae at Point Danger, Torquay, Victoria, noting a white animal, with his figure agreeing well with the overall form shown in the photograph of Fig. 2c. Burn's (unpubl.) figure shows a mentum that is grooved along the length of its midline. Burn (unpubl.) has also collected *Linopyrga* cf. *portseaensis* intertidally from Point Danger Torquay on

1f.



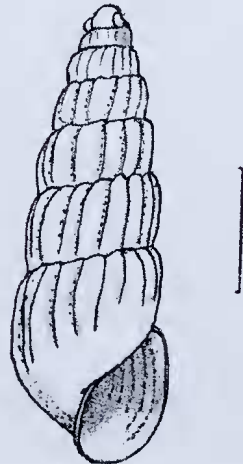
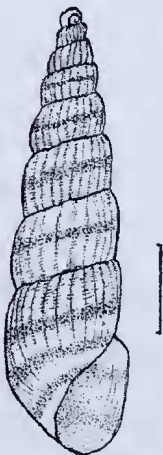
1g.



1h.



1i.



Amphibolis seagrass, and also intertidally from Point Lonsdale on algae.

Distribution: It is found in Victoria and Tasmania (Cotton, 1959), and probably also in New South Wales (Laserson, 1951).

***Pseudoskenella depressa* Ponder, 1973**

Material: Two specimens, on the polychaete tube worm *Galeolaria caespitosa* Lamarck, 1818 in the mid-littoral zone, Waratah Bay, Victoria, 19 September, 2005. Collected by P. Vafiadis. Museum Victoria reference number F113327.

Shell (Fig. 1d): The shells are thin, smooth, flatly globose, colourless, transparent, and 1.0 mm wide. The apices of the shells appear inset. The sutures are well defined, the aperture is ovate and the umbilicus shallow. There is a thin, glassy operculum.

Animal (Figure 2d): This has been described and figured by Ponder (1973) and also noted by Burn (1974a) and Burn and Bell (1976), the latter having found it among *G. caespitosa* collected from eight different Victorian localities from Portland in the west to Shallow Inlet in the east. The animal is semi-opaque white, with semi-translucent white cephalic tentacles. It has a yellowish mantle organ flecked with brown spots, visible through the dorsum of the shell. Brown visceral organs are visible beneath the early whorls. The cephalic tentacles each distally bear a small, transparent tentacular pad. The eyes are black and the mentum is not notched. The proboscis was not seen everted, but Ponder (1973) reports it to be three times the shell length when fully extended. The dorsal propodium bears a white transverse ridge and the sole a faint posterior midline cleft. The extended foot is equal to or slightly longer than the shell. The animal is active, crawling with a smooth, gliding motion. The foot does not protrude beyond the posterior shell when crawling. It feeds parasitically on its host, the tube worm *G. caespitosa*, and has also been found on algae and under stones (Ponder, 1973).

Distribution: It is found in eastern Australia from Queensland to Victoria (Ponder, 1973), including Tasmania (Burn and Bell, 1976). Because *G. caespitosa* also occurs in South Australia and Western

Australia (Edgar, 1997), it seems feasible that *P. depressa* may also occur there.

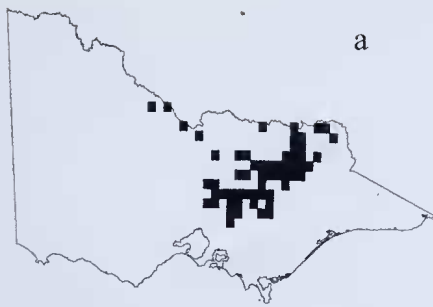
***Syrnola bifasciata* Tenison Woods, 1875**

Material: Two specimens, sieved intertidally from among mud and *Zostera* seagrass, Crawfish Rock, Western Port Bay, Victoria, Friday 28 November, 2006. Collected by R. Burn. Museum Victoria reference number F113532.

Shell (Fig. 1e): The shells are 4.2 mm and 4.0 mm long, white, elongate, semi-opaque and smooth. The protoconch is largely concealed by the first teleoconch whorl. The teleoconch whorls bear two brown spiral bands, one centrally and the other just above the suture, with a third band on the body whorl. The columella has one prominent plication and there is a triangular umbilicus. The operculum is translucent and yellow-brown. On preservation, the retracted animals have left seven-eighths of the body whorl vacant, exposing areas of white calcareous thickening on the inner dorsal body whorl.

Animal (Fig. 2e): The animal is semi-opaque white, sparsely dotted with spots of cream-white on the cephalic tentacles, mentum and dorsal foot; on the head behind each eye these cream-white spots are densely aggregated, and extend posteriorly out of view under the anterior shell margin. The cephalic tentacles are broad, flattened along their length, and taper to a blunt point, without tentacular pads. The eyes are black and the prominent mentum tapers outwards distally, and is widely grooved along the length of its midline. It is held in front of the anterior foot when crawling. The extended foot is about three quarters of the shell length and the sole is broader anteriorly and bears no clefts or visible openings. The animal crawls with a smooth, gliding motion.

Burn (unpubl.) has figured and recorded this species alive from among *Caulerpa* algae at Point Lonsdale Victoria, agreeing with the above, except that the mentum of the Point Lonsdale specimen does not taper outwards at its distal end and is not shown to be prominently grooved along the length of its midline. Burn (unpubl.) has also recorded this species alive from Port Albert, Victoria, and from New South Wales.



a



b



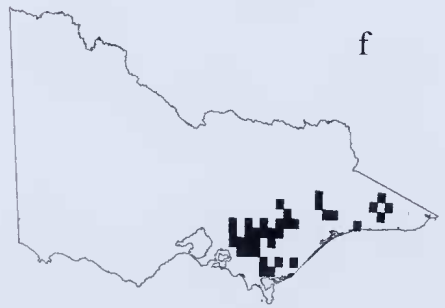
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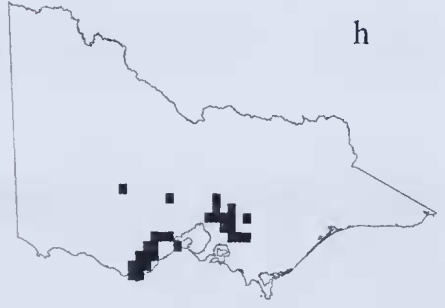
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h

Distribution maps of *Euastacus* species. a. *Euastacus armatus*. b. *Euastacus bidawalus*. c. *Euastacus bispinosus*. d. *Euastacus claytoni*. e. *Euastacus diversus*. f. *Euastacus kershawi*. g. *Euastacus yanga*. h. *Euastacus yarraensis*.

Distribution maps of *Euastacus* species. i. *Euastacus crassus*. j. *Euastacus woiwuru*. k. *Euastacus neodiversus*.



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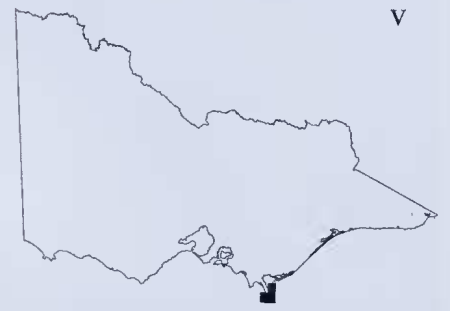
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Distribution maps of *Engaeus* species. q. *Engaeus phyllocercus*. r. *Engaeus strictifrons*. s. *Engaeus tuberculatus*. t. *Engaeus victoriensis*. u. *Engaeus affinis*. v. *Engaeus australis*.

Distribution maps of *Engaeus* species. a. *Engaeus cunicularius*. b. *Engaeus curvisuturus*. c. *Engaeus cymus*. d. *Engaeus fultoni*. e. *Engaeus urostrictus*. f. *Engaeus merosetosus*. g. *Engaeus orientalis*. h. *Engaeus hemicirratulus*.

Distribution maps of *Engaeus* species. i. *Engaeus karnanga*. j. *Engaeus laevis*. k. *Engaeus lyelli*. l. *Engaeus mallacoota*. m. *Engaeus quadrimanus*. n. *Engaeus rostrigaleatus*. o. *Engaeus sericatus*. p. *Engaeus sternalis*.

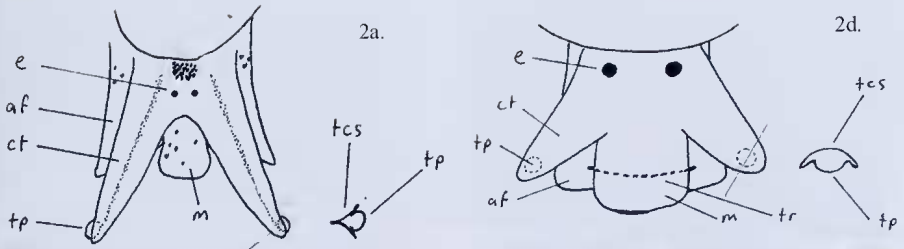


Fig. 2. Head and anterior foot views. Not to scale relative to each other. Dotted lines on the cephalic tentacles represent a ventral edge visible through the tentacle. Dotted lines in *Pseudoskenella depressa* indicate the transverse ridge visible through the mentum. Key: af - anterior foot; ct - cephalic tentacle; e - eye; m - mentum; tp - tentacular pad; tr - transverse ridge; tes - transverse cross section through the left cephalic tentacle as indicated. (a). *Odostomia deplexa* (Tate & May, 1900), (b). Entire animal of *Linopyrga pascoei* (Angas, 1867), (c). Entire animal of *Linopyrga portseaensis* (Gatliff & Gabriel, 1911), (d). *Pseudoskenella depressa* Ponder, 1973.

Distribution: It is found in south-eastern Australia from central New South Wales to South Australia, including Tasmania (Jansen, 1995; Cotton, 1959).

***Syrnola tincta* Angas, 1871**

Material: One specimen, collected intertidally at Blanket Bay, Victoria, 15

February, 2004, by A. Falconer. Museum Victoria reference number F113328.

Shell (Fig. 1f): The shell is cream white, opaque, smooth, and 6.9 mm long. The protoconch is smooth and heterostrophic. The telococonch whorls are smooth except for microscopic longitudinal growth scratches, and patterned by faint broken